

Problemario

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1 =  $(x^4 - 2x^3 - 11x^2 + 30x - 20) : (x^2 + 3x - 2)$

$$\begin{array}{r} x^2 - 5x + 6 \\ x^2 + 3x - 2 \overline{) x^4 - 2x^3 - 11x^2 + 30x - 20} \\ \underline{-x^4 - 3x^3 + 2x^2} \phantom{- 20} \\ -5x^3 + 9x^2 + 30x \phantom{- 20} \\ \underline{+5x^3 + 15x^2 - 10x} \phantom{- 20} \\ 6x^2 + 20x - 20 \\ \underline{6x^2 - 18x + 12} \\ 2x - 8 \end{array}$$

$(x^2 - 5x + 6) \left( \frac{2x - 8}{x^2 + 3x - 2} \right)$

2 =  $(x^6 + 5x^4 + 3x^2 - 2x) : (x^2 - x + 3)$

$$\begin{array}{r} x^4 + x^3 + 3x^2 - 6 \\ x^2 - x + 3 \overline{) x^6 + 0x^5 + 5x^4 + 0x^3 + 3x^2 - 2x + 0} \\ \underline{-x^6 + 1x^5 - 3x^4} \phantom{- 2x + 0} \\ 1x^5 + 2x^4 + 0x^3 \phantom{- 2x + 0} \\ \underline{-1x^5 + 1x^4 - 3x^3} \phantom{- 2x + 0} \\ 3x^4 - 3x^3 + 3x^2 \phantom{- 2x + 0} \\ \underline{-3x^4 + 3x^3 - 9x^2} \phantom{- 2x + 0} \\ -6x^2 - 2x + 0 \\ \underline{+6x^2 - 6x + 18} \\ -8x + 18 \end{array}$$

$x^4 + 1x^3 + 3x^2 - 6$   
 $\left( \frac{-8x + 18}{x^2 - x + 3} \right)$

3 =  $(2x^4 - 2x^3 + 3x^2 + 5x + 10) : (x + 2)$

$$\begin{array}{r} 2x^3 - 6x^2 + 15x + 35 \\ x + 2 \overline{) 2x^4 - 2x^3 + 3x^2 + 5x + 10} \\ \underline{-2x^4 - 4x^3} \phantom{+ 10} \\ -6x^3 + 3x^2 \phantom{+ 10} \\ \underline{+6x^3 + 12x^2} \phantom{+ 10} \\ 15x^2 - 5x \phantom{+ 10} \\ \underline{15x^2 - 30x} \phantom{+ 10} \\ 35x + 10 \\ \underline{-35x - 70} \\ -60 \end{array}$$

$2x^3 - 6x^2 + 15x + 35 + \left( \frac{-60}{x+2} \right)$

$$4 \div (x^{10} - 1024) \div (x+2)$$

$$x^9 - 2x^8 + 4x^7 - 8x^6 + 16x^5 - 32x^4 + 64x^3 - 128x^2 + 256x - 512$$

$$x+2 \overline{) x^{10} + 0x^9 + 0x^8 + 0x^7 + 0x^6 + 0x^5 + 0x^4 + 0x^3 + 0x^2 + 0x - 1024}$$

$$\underline{-x^{10} - 2x^9}$$

$$\begin{array}{r} -2x^9 + 0x^8 \\ + 2x^9 + 4x^8 \end{array}$$

$$\begin{array}{r} 4x^8 + 0x^7 \\ - 4x^8 - 8x^7 \end{array}$$

$$\begin{array}{r} -8x^7 + 0x^6 \\ + 8x^7 + 16x^6 \end{array}$$

$$16x^6 + 0x^5$$

$$\underline{-16x^6 - 32x^5}$$

$$\begin{array}{r} -32x^5 + 0x^4 \\ + 32x^5 + 64x^4 \end{array}$$

$$\begin{array}{r} 64x^4 + 0x^3 \\ - 64x^4 + 128x^3 \end{array}$$

$$\begin{array}{r} -128x^3 + 0x^2 \\ + 128x^3 + 256x^2 \end{array}$$

$$\begin{array}{r} 256x^2 + 0x \\ - 256x^2 - 512x \end{array}$$

$$+ 512x - 1024$$

$$\underline{-512x - 1024}$$

0

$$\begin{array}{r} 11 \\ 236 \\ + 256 \\ \hline 5 \cdot 2 \end{array}$$

$$\begin{array}{r} 1024 \\ 2048 \\ \hline 2048 \end{array}$$

$$5 = (3A^3 + 5A^2 - 4) : (3A)$$

$$\frac{3a^3}{3a} + \frac{5a^2}{3a} - \frac{4}{3a}$$

$$a^2 - 5/3a - 4/3a$$

$$6 = (2/3A^2B^2 - 1/4A^2B^4 + 5/6AB^4 - 2/5B^5) : (-1/2AB^2)$$

$$\frac{2/3 a^2 b^2}{-1/2 ab^2} - \frac{1/4 a^2 b^4}{1/2 ab^2} + \frac{5/6 ab^4}{1/2 ab^2} - \frac{2/5 b^5}{1/2 ab^2}$$

$$-\frac{4}{3} a + \frac{2}{4} ab^2 - \frac{10}{6} b^2 + \frac{4}{5} \frac{b^3}{a}$$

$$-\frac{4}{3} a + \frac{1}{2} ab^2 - \frac{5}{3} b^2 + \frac{4}{5} \frac{b^3}{a}$$

$$7 = (X^3 - 5X - 1) : (X - 3)$$

$$\begin{array}{r} X^2 + 3X + 4 \\ X - 3 \overline{) X^3 + 0X^2 - 5X - 1} \\ \underline{-X^3 + 3X^2} \phantom{-1} \\ \phantom{X^3} + 3X^2 - 5X - 1 \phantom{-1} \\ \phantom{X^3} \underline{-3X^2 + 9X} \phantom{-1} \\ \phantom{X^3} \phantom{3X^2} + 4X - 1 \phantom{-1} \\ \phantom{X^3} \phantom{3X^2} \underline{-4X + 12} \phantom{-1} \\ \phantom{X^3} \phantom{3X^2} \phantom{4X} + 11 \phantom{-1} \end{array}$$

$$X^2 + 3X + 4 + \left(\frac{11}{X-3}\right)$$